REMARKS

Claims 1, 15 and 22 are amended herein. Claims 1-22 remain pending in the application.

Claims 1-3, 8, 9, 14 and 22 over Park

In the Office Action, claims 1-3, 8, 9, 14 and 22 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Park, U.S. Patent No. 5,502,217 ("Park"). The Applicants respectfully traverse the rejection.

Claims 1-3, 8, 9, 14 and 22 recite, *inter alia*, an echo canceler that is configured for use in a wireless device.

Park appears to disclose echo time cancellation determined in a full duplex system by providing an echo time determiner which samples signals on either a transmit path or a receive path (Abstract). The determiner may be used for electrical cancellation, i.e., coupled to the receive path (Park, col. 3, lines 57-59). Conversely, the determiner may be used for acoustic echoes only, a sampler would receive inputs form the transmit path (Park, col. 3, lines 59-61). An acoustic echo canceller is connected to a speakerphone system within a teleconferencing system **hardwired** to a PSTN (Park, col. 1, lines 12-24). The hybrid echo canceler is connected to a telephone line interface within the teleconferencing system (Park, col. 1, lines 29-38).

Park's acoustic echo canceler is configured for operation in a speakerphone within a teleconferencing system. Park is unconcerned with a wireless device, much less disclose an acoustic echo canceler configurable for use in a wireless device, as recited by claims 1-3, 8, 9, 14 and 22.

Having an echo canceler that is configurable for use in a wireless device allows, e.g., the echo canceler to be tailored for a specific application. A wireless device has specific requirements for echo cancellation. Park's echo canceler for use in a speakerphone would require different echo cancellation characteristics than an echo canceler used in a wireless device. An echo cancellation system for use in a speakerphone would not suggest an echo cancellation system for use in a wireless device.

Accordingly, for at least all the above reasons, claims 1-3, 8, 9, 14 and 22 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 6, 7, 15, 16, 18 and 19 over Park in view of Iyengar

In the Office Action, claims 6, 7, 15, 16, 18 and 19 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Park in view of Iyengar, U.S. Patent No. 5,663,955 ("Iyengar"). The Applicants respectfully traverse the rejection.

Claims 6, 7 are dependent on claim 1, and are allowable for at least the same reasons as claim 1.

Claims 6 and 7 recite, *inter alia,* an echo canceler that is configured as an acoustic echo canceler for use in a wireless device. Claims 15, 16, 18 and 19 recite, *inter alia,* operating an echo canceler module as an acoustic echo canceler if the echo canceler module is utilized in a wireless device.

As discussed above, Park fails to teach an echo canceler configurable for use in a wireless device, as recited by claims 6, 7, 15, 16 and 18.

The Office Action relies on Iyengar to allegedly make up for the deficiencies in Ariyama to arrive at the recited invention. The Applicants respectfully disagree.

Iyengar appears to disclose an echo canceler system that includes first and second echo cancelers (Abstract). In a loudspeaker telephone set with full-duplex operation, an acoustic path arises between a loudspeaker and a microphone, and a line echo path arises at a hybrid transformer which connects a set's four-wire system to a two-wire local customer loop (Iyengar, col. 3, lines 30-34). A first echo canceler is used for canceling a line echo, and a second echo canceler is used for canceling acoustic echo (Iyengar, col. 3, lines 34-36).

Iyengar discloses application of a echo canceler system that includes a first and second echo cancelers for a loudspeaker telephone set. A loudspeaker telephone set uses the first and second echo cancelers simultaneously. Using a first and second echo cancelers simultaneously is NOT an echo canceler that is configurable between two modes of operation, much

less an echo canceler capable of configurable for use in a wireless device, as recited by claims 6, 7, 15, 16 and 18.

Neither Ariyama nor Iyengar, either alone or in combination, disclose, teach or suggest an echo canceler configurable for use in a wireless device, as recited by claims 6, 7, 15, 16 and 18.

Accordingly, for at least all the above reasons, claims 6, 7, 15, 16 and 18 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 12, 13 and 21 over Park in view of Velardo, Danstrom and Iyegar

In the Office Action, claims 12 and 13 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Park in view of Velardo et al., U.S. Patent No. 5,587,998 ("Velardo"), and further in view of Danstrom, U.S. Patent No. 4,582,963 ("Danstrom"), with claim 21 allegedly obvious over Park in view of Iyengar, and further in view of Velardo and Danstrom. The Applicants respectfully traverse the rejection.

Claims 12, 13 and 21 are dependent on claims 1 and 15 respectively, and are allowable for at least the same reasons as claims 1 and 15.

Claims 12 and 13 recite, *inter alia,* an echo canceler that is configured as an acoustic echo canceler for use in a wireless device. Claim 21 recites, *inter alia,* operating an echo canceler module as an acoustic echo canceler if the echo canceler module is utilized in a wireless device.

As discussed above, Park and Iyengar fails to disclose an echo canceler configurable for use in a wireless device, as recited by claims 12, 13 and 21.

The Office Action relies on Velardo and Danstrom to allegedly make up for the deficiencies in Park and Iyengar to arrive at the recited invention. The Applicants respectfully disagree.

Velardo appears to disclose a method and apparatus for reducing, in a communication signals received by a local network from a remote network, energy content attributable to echoes of signals transmitted into a local network (Velardo, Abstract). Selective regulation of individual frequency sub-bands leads

to higher operational stability and better voice quality than are achieved using conventional, fullband nonlinear processors for reducing echo (Velardo, col. 5, lines 18-22).

Danstrom appears to disclose a telephone echo canceling circuit employing a digital transversal filter which adapts to incorporate an impulse response (Abstract). The initial zero response created by transmission delays are ignored through the use of a memory that holds signal samples for this period (Danstrom, col. 2, lines 16-47).

Velardo teaches selective regulation of individual frequency sub-bands. Selective frequency regulation is NOT an echo canceler that is configurable between two modes of operation, much less an echo canceler configurable as an acoustic echo canceler for use in a wireless device, as recited by claims 12, 13 and 21.

Danstrom discloses an echo canceling circuit that is able to ignore an initial zero response. Danstrom fails to disclose an echo canceler that is configurable between two modes of operation, much less an echo canceler configurable for use in a wireless device, as recited by claims 12, 13 and 21.

Neither Park, Velardo nor Danstrom, either alone or in combination, disclose, teach or suggest an echo canceler configurable for use in a wireless device, as recited by claims 12, 13 and 21.

Accordingly, for at least all the above reasons, claims 12, 13 and 21 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 4, 5, 10, 11, 17 and 20 over Park in view of Iyengar, Velardo and Sih

In the Office Action, claims 4 and 5 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Park in view of Sih, U.S. Patent No. 5,687,229 ("Sih"), claims 10 and 11 allegedly obvious over Park in view of Velardo and Sih, claim 17 allegedly obvious over Park in view of Iyengar and Sih, and claim 20 allegedly obvious over Park in view of Iyengar, Velardo and Sih. The Applicants respectfully traverse the rejection.

Claims 4, 5, 10, 11, 17 and 20 are dependent on claims 1 and 15 respectively, and are allowable for at least the same reasons as claims 1 and 15.

Claims 4, 5, 10 and 11 recite, *inter alia,* an echo canceler that is configured as an acoustic echo canceler for use in a wireless device. Claims 17 and 20 recite, *inter alia*, operating an echo canceler module as an acoustic echo canceler if the echo canceler module is utilized in a wireless device.

As discussed above, neither Park, Iyengar nor Velardo, either alone or in combination, disclose, teach or suggest an echo canceler configurable for use in a wireless device, as recited by claims 4, 5, 10, 11, 17 and 20.

The Office Action relies on Sih to allegedly make up for the deficiencies in Park, Iyengar and Velardo to arrive at the recited invention. The Applicants respectfully disagree.

Sih appears to teach a method of controlling echo canceling in an echo cancelation system using a state machine controller (Abstract). The echo canceler includes a state machine which is configured into a predetermined state of a plurality of states depending on a presence near-end speech signal, far-end speech signal, or both near-end and far-end speech signals (Sih, Abstract). Based on a predetermined state of the state machine, the controller in the state machine controls the update of coefficients of a plurality of adaptive filters (Sih, Abstract). To preserve echo filter coefficients of a echo canceler filter, a variable adaptation threshold is used to switch on and off adaptation of the echo canceler filter (Sih, col. 13, lines 29-32).

Sih teaches an echo canceler using a plurality of adaptive filters. A plurality of adaptive filters is NOT an echo canceler that is configurable between two modes of operation, much less an echo canceler configurable for use in a wireless device, as recited by claims 4, 5, 10, 11, 17 and 20.

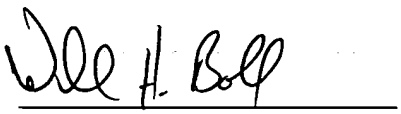
Neither Park, Iyengar, Velardo nor Sih, either alone or in combination, disclose, teach or suggest an echo canceler configurable for use in a wireless device, as recited by claims 4, 5, 10, 11, 17 and 20.

Accordingly, for at least all the above reasons, claims 4, 5, 10, 11, 17 and 20 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,



William H. Bollman
Reg. No. 36,457

Manelli Denison & Selter PLLC
2000 M Street, NW
Suite 700
Washington, DC 20036-3307
TEL. (202) 261-1020
FAX. (202) 887-0336

WHB/df